IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Group Art Unit: 2145
Examiner: Mr. Wen Tai Lin

In re PATENT APPLICATION of:

Applicant	: Lawson A. Wood	)
Serial No.	: 10/649,932	)
Filed	: August 28, 2003	)
For	: METHOD FOR RECOGNIZING AND DISTRIBUTING MUSIC	) **RESPONSE**)
Attorney Ref. :	AW-20	)

December 4, 2006

Attn: Mail Stop Appeal Brief-Patents
Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Sir:

This is responsive to the "Notification of Non-Compliant Appeal Brief (37 CFR 41.37)" mailed October 2, 2006, the period for reply to is being extended to expire on December 2, 2006 (a Saturday, and thus on the following Monday, December 4, 2006) by a Petition filed concurrently herewith.

A fee of $ 60 is being submitted concurrently. Should this remittance be accidentally missing, however, or should any additional fees be needed (including extension of time fees, since Applicant hereby provisionally petitions for any extensions that may be deemed necessary to avoid abandonment), the Director may charge such fees to Deposit Account number 18-0002 (and please notify Applicant accordingly, at the telephone number identified below, so that he can reimburse his firm).

In response to the requirement in the "Notification of Non-Compliant Appeal Brief (37 CFR 41.37)," a paper entitled "Supplemented Appeal Brief" is attached hereto. It is respectfully requested that the "Supplemented Appeal Brief" be entered. The appeal brief fee mentioned in the introductory section of the "Supplemented Appeal Brief" has already been paid.

Respectfully submitted,

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
Before the Board of Patent Appeals and Interferences

Group Art Unit: 2145
Examiner: Mr. Wen Tai Lin

In re PATENT APPLICATION of:

Applicant	: Lawson A. Wood	)
Serial No.	: 10/649,932	)
Filed	: August 28, 2003	) SUPPLEMENTED*
		) **APPEAL BRIEF**
For	: METHOD FOR RECOGNIZING AND DISTRIBUTING MUSIC	)
Attorney Ref. :	AW-20	)

June 5, 2006

Attn: Mail Stop Appeal Brief-Patents
Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Sir:

INTRODUCTION

This is an Appeal to the Board of Patent Appeals and Interferences from the decision, in the Office Action dated November 22, 2005 (hereafter called the "Final Rejection"), finally rejecting claims 1, 5-7, 13, 14, 17, 21-24, and 27-37. A Notice of Appeal was filed on March 22, 2006, together with a Petition for a one-month extension of time. A Petition for a one-month extension is also being filed concurrently, so it is respectfully submitted that the present Appeal Brief is timely.

A fee of $_____ is being submitted concurrently. Should this remittance be accidentally missing, however, or should any additional fees be needed (including extension of time fees, since Applicant hereby provisionally petitions for any further extensions that may be deemed necessary to avoid abandonment), the Director may charge

* The original Appeal Brief was filed on June 5, 2006. The present "Supplemented Appeal Brief" is being filed on December 4, 2006 in response to a "Notification of Non-Compliant Appeal Brief (37 CFR 41.37)" dated October 2, 2006. The supplementation has been added in a distinctive type font.

such fees to our Deposit Account number 18-0002 (and please notify Applicant accordingly, at the telephone number listed below, so that he can reimburse his firm).

(i) REAL PARTY IN INTEREST

The real party in interest in this appeal the Applicant.

In response to the alleged defect specified in item 1 of the "Notification of Non-Compliant Appeal Brief (37 CFR 41.37)," Applicant hereby confirms that his name is Lawson A. Wood (although he frequently goes by his middle name, Allen) and that he, the aforesaid Lawson A. Wood, is the real party of interest in this appeal.

(ii) RELATED APPEALS AND INTERFERENCES

There are no prior or pending appeals, interferences, or judicial proceedings which may be related to, directly affect or be directly affected by, or have a bearing on the Board's decision in the pending appeal.

(iii) STATUS OF THE CLAIMS

Claims 1, 5-7, 13, 14, 17, 21-24, and 27-37 are pending in this application. The have all been finally rejected. Claims 2-4, 8-12, 15, 16, 18-20, 25, and 26 have been cancelled. No claims have been allowed.

(iv) STATUS OF AMENDMENTS

An Amendment After Final Rejection was filed March 22, 2006 to make improvements of a formal nature in three of the claims. An Advisory Action dated March 31, 2006 reported that it would be entered.

(v) SUMMARY OF CLAIMED SUBJECT MATTER

The present application discloses several embodiments of a method for recognizing and distributing music over a network such as the internet.

Figure 2 of the application's drawings illustrates a personal computer 28 that is equipped with a speaker 34, a monitor 36, a keyboard 38, a mouse 40, and a microphone 42 (page 5, lines 9-14). The monitor 36 in Figure 2 shows that a customer has visited the web

site of a music distribution company (step 52 in Figure 3), and has been given several options (step 54) (page 5, lines 2-7 and page 7, lines 10-14). One of these is a music recognition option, which will be discussed shortly. For now, suppose that the customer has chosen an option B (step 56), which permits the customer to select a time period of interest and a type of music, whereupon the music distribution company's server returns a menu of songs or other musical compositions that are available for the customer to select. If the customer selects 1950-1960 as the time interval, for example, and rock and roll as the type of music, a menu that includes such songs as "Blue Suede Shoes" by Elvis Presley is downloaded to the customer (step 58) (page 6, line 16 to page 7, lines 19-23). If the customer then selects "Blue Suede Shoes" from this menu (step 60), preview information such as corrupted version or a snippet from "Blue Suede Shoes" is downloaded to the customer (step 62) so that the customer can audibly verify that the selected composition is indeed the composition that the customer wants to purchase (page 7, line 23 to page 8, line 16). If so, the customer provides payment information (step 64), such as a credit card number, and this payment information is verified by the music distribution company (step 66) before the composition is downloaded to the customer (step 68) (page 8 line 21 to page 9, line 1).

But suppose that the customer has forgotten the name of a desired musical composition and the name of the performer, and possibly also the time period when it was a hit. A music recognition option 72 shown in Figure 2 can then be selected in step 56 of Figure 3 (see page 8, lines 4-11). In one embodiment, the customer hums, sings, or otherwise vocalizes a characteristic portion of the desired composition into microphone 42, and this specimen is sent to the music distribution company (page 9, lines 11-16). A system for recognizing musical compositions as shown in Figure 4 can then be use to match features extracted from the customer's specimen with patterns stored in a pattern library, and to identify musical compositions that are candidates for the composition that the customer is seeking (page 9, line 22 to page 11, line 12).

Details of a feature extraction unit 80' and a normalization unit 84' that can be used in the system of Figure 4 are shown in Figure 6, and explained in the passage at page 13, line 5 to page 20, line 21. Noteworthy features are that the feature extraction unit 80' includes a bandpass filter 132 whose passband is limited to a few octaves in which most customer can be expected to sing, a frequency analyzer such as a filter bank 134, and a

level detector 136 which signals whether the level of the bandpass-filtered signal is above a predetermined value (page 13, lines 5-13). The normalization unit 84' has a pitch sequence analyzer 138 that includes a strongest tone detector 140, which identifies the frequency of the strongest signal from the filter bank 134 if the level of the bandpass-filtered signal exceeds the predetermined value (page 13, lines 14-16). If the frequency of the strongest signal from the filter bank 134 changes and if the level of the bandpass-filtered signal is above the predetermined value, the new frequency is identified by the strongest tone identifier 140 and the old one is transferred to a prior tone memory 142 (page 13, line 16 to page 14, line 1). The strongest tone identifier 140 continues to identify a tone even when the customer's specimen accurately reflects a rest or period of silence in the composition itself, which could be looked at as an error if the purpose were to fully characterize the composition to as to be able to accurately reproduce it from the characterization alone, instead of to generate a pattern for pattern matching, but ignoring periods of silence in the specimen will probably accommodate differences in the way that customers vocalize music without substantially reducing the utility of the patterns that are produced when they are matched against patterns stored in a pattern library (page 14, lines 1-10).

With continuing reference to Figure 6, the normalization unit 84' also includes a scale generator 144 that receives the prior tone stored in memory 142, and a half-tone interval quantizer 152 that receives the scale produced by the generator 114 along with the frequency that is currently identified as the strongest by the strongest tone identifier 140 and the frequency that was previously identified as strongest (page 16, bottom line to page 17, line 8). The half-tone quantizer then emits a signal depicting the pitch sequence in the specimen (page 17, lines 8-23).

The normalization unit 84' preferably also includes a duration sequence analyzer 156 (see page 17, line 24 to page 18, line 21).

An embodiment shown in Figures 7 and 8 invites increased customer participation. Thus customer's monitor 36 displays a keyboard 168, and the customer uses the mouse 40 (Figure 2) to hear different concert-pitch tones until the customer has identified a suitable key for vocalizing the specimen (page 20, line 22 to page 21, line 2). The customer also uses the mouse to adjust the position of a marker 174 along a tempo scale from slow to fast, accompanied by the sound of drumbeats (page 21, lines 3-8).

In the embodiment shown in Figure 10, the customer's monitor 36 also displays a keyboard 168. Unlike the embodiment shown in Figures 7 and 8, though, the customer uses the displayed keyboard 168 in Figure 10 to pick out the specimen with the aid of the mouse 40 (page 23, line 19 to page 20, line 7). The customer can use various buttons that are displayed on the monitor 36 (record, back, pause, and so forth) to help assemble the specimen (page 24, lines 7-18). The specimen that is sent to the music distribution company for analysis, when the customer clicks on a "send" button 218 displayed on the monitor 36, is a code that specifies the pitches of the notes in the picked-out specimen and the durations of these notes (such as [(C, 1/4), (G#, 1/4), (F, 1/2), ...]) (page 24, lines 20-22).

In a modification of the embodiment described with respect to Figure 10, the customer picks out the specimen on the computer's keyboard 38 (see Figure 1) instead of the simulated piano keyboard 168 (page 25, lines 9-10). The monitor 36 preferably displays a piano keyboard anyway, along with a typewriter keyboard, and uses lines to map the correspondence between the keys of the piano keyboard and the keys of the typewriter keyboard (page 25, lines 10-13).

Although it is believed that the original version of this Brief fully complied with 37 CFR 41.37(c)(1)(v), and although 37 CFR 41.37(c)(1)(v) requires a "concise explanation" of the subject matter of the claims rather than some type of "mapping" of the claims, and although steps in method claims are not necessarily steps for performing functions (method steps may simply be acts), and assuming that a "mapping" of the claims means an annotated version of the claims showing an example of how the claims can be read on the disclosure, the following annotated version of various claims is provided in response to the alleged defect identified in item 4 of the "Notification of Non-Compliant Appeal Brief (37 CFR 41.37)." The annotations have been added in parentheses.

1. A method for distributing music over the internet, comprising the steps of:

(a) recognizing a plurality of musical compositions from a specimen vocalized by a person, by comparing a pattern derived from the specimen with

patterns from a pattern library (72 in Figure 4; see page 9, line 4 to page 10, line 14);

(b) sending information to identify the musical compositions in writing to the person over the internet (58 in Figure 3; see page 11, lines 3-5);

(c) receiving a request from the person over the internet for an audio preview of one of the musical compositions, which has been selected by the person (102 in Figure 5; see page 11, lines 15-18);

(d) sending a corrupted version of some or all of the selected musical composition to the person over the internet (62 in Figure 3; see page 8, lines 2-5);

(e) receiving a request from the person over the internet for the selected musical composition without corruption (64 in Figure 3; see page 8, lines 17-24); and

(f) sending the selected musical composition without the corruption to the person (68 in Figure 7; see page 8, line 24 to page 9, line 3),

wherein the person is provided with a set of keys to hear and choose from before vocalizing the specimen (168 in Figure 7; see page 20, line 22 to page 21, line 3), and

wherein the pattern derived from the specimen comprises pitch information (80' and 84' in Figure 6; see page 13, line 5 to page 14, line 13 and page 16, line 15 to page 17, line 23).

14. A method for distributing music to a person over the internet, comprising the steps of:

(a) picking out a musical specimen on a simulated musical instrument, step (a) being conducted by the person, the specimen comprising codes to identify the notes picked out rather than sounds detected by a microphone, the codes being selected from a set having not more than about twelve codes per octave, the codes in the set identifying notes in an evenly-tempered scale (220 in Figure 10; see page 24, lines 2-22);

(b) sending the specimen over the internet to a music distribution company (see page 9, lines 4-16);

(c) recognizing at least one candidate musical composition from the specimen, step (c) being conducted by the music distribution company (72 in Figure 4; see page 9, line 17 to page 10, line 24);

(d) sending information to identify the at least one candidate musical composition in writing to the person over the internet (102 in Figure 5; see page 11, lines 15-17);

(e) selecting a musical composition from the at least one candidate musical composition, step (e) being conducted by the person (104 in Figure 5; see page 11, lines 17-18);

(f) sending a request for an audio preview of the selected musical composition to the music distribution company over the internet (60 in Figure 3; see page 7, line 23 to page 8, line 1);

(g) sending a corrupted version of some or all of the selected musical composition to the person over the internet (62 in Figure 3; see page 8, lines 2-16); and

(h) sending the selected musical composition without corruption to the person over the internet (68 in Figure 3; see page 8, line 24 to page 9, line 1).

28. The method of claim 1, wherein the person is additionally provided with a user-adjustable tempo for vocalizing the specimen (170-176 in Figure 7; see page 21, lines 3-8).

29. The method of claim 1, wherein deriving the pattern comprises detecting whether the specimen has a loudness level greater than a predetermined value (136 in Figure 6; see page 13, lines 10-113), dividing the specimen into a plurality of frequency bands (134 in Figure 6; see page 13, lines 6-10), finding a first one of the frequency bands that has the strongest signal when the loudness level of the specimen is greater than the predetermined value (140 in Figure 6; see page 13, lines 14-16), detecting when the strongest signal shifts to a second one of the frequency bands if the loudness level of the specimen is greater than the predetermined value (see page 13, line 16 to page 14, line 10), and detecting the number of half tones between the first one of the frequency

bands and the second one of the frequency bands (142-152 in Figure 6; see page 16, line 1 to page 17, line 17).

30. The method of claim 1, wherein deriving the pattern comprises generating information identifying a sequence of notes in the specimen without rests between the notes (80' and 138 in Figure 6; see page 13, line 5 to page 14, line 13 and page 16, line 15 to page 17, line 16), and information about time the interval between the beginning of one note in the sequence and the beginning of the next note (156 in Figure 6; see page 17, line 24 to page 18, line 21).

32. The method of claim 21, wherein deriving the pattern comprises generating information identifying a sequence of notes without rests between the notes (80' and 138 in Figure 6; see page 13, line 5 to page 14, line 13 and page 16, line 15 to page 17, line 16), and information about the interval between the beginning of one note in the sequence and the beginning of the next note (156 in Figure 6; see page 17, line 24 to page 18, line 21).

33. The method of claim 21, further comprising displaying the simulated musical instrument (168) on a monitor that additionally displays a plurality of options for use by the person, the options including a record option (178), a play option (212), a back-up option (214), and a send option (218), the simulated musical instrument and the options being actuated by the person using a pointing device (see Figure 10 and page 23, line 19 to page 24, line 22 for the elements identified in the annotations added to this claim).

34. A method for delivering a musical composition desired by a person who does not know the title of the desired musical composition, comprising the steps of:

(a) generating a specimen having information characterizing the desired musical composition, the specimen being generated by the person while the person is at a first location (10 in Figure 1) using an apparatus (28, 36, 38 in Figure 2; see page 5, lines 9-16) configured for sending and receiving information

via a communication network (16 in Figure 1; see page 5, lines 2-8), the apparatus including a keyboard (38 in Figure 2) and an audio transducer (34 in Figure 2) for producing sounds, keys of the keyboard being assigned notes of a musical scale and the notes being sounded by the transducer when the keys are manually actuated by the person (see page 24, lines 2-6 and page 25, lines 9-10);

(b) sending the specimen over the communication network to a second location (18 in Figure 1; see page 24, lines 18-20) that is remote from the first location;

(c) at the second location, identifying the desired musical composition from the specimen (72 in Figure 4; see page 9, line 17 to page 10, line 24); and

(d) sending the desired musical composition to the person (68 in Figure 3; see page 8, line 24 to page 9, line 3),

wherein the person generates the specimen by actuating a sequence of keys while listening to the notes sounded by the transducer (see page 24, lines 4-6 and page 25, lines 9-10).

35. The method of claim 34, wherein the apparatus additionally has a screen (36 in Figure 2), and further comprising displaying on the screen a mapping that associates notes of the scale with keys of the keyboard (see page 25, lines 10-13).

37. The method of claim 34, wherein step (c) comprises identifying a sequence of notes in the specimen without rests between the notes (80' and 138 in Figure 6; see page 13, line 5 to page 14, line 13 and page 16, line 15 to page 17, line 16), and information about the time interval between the beginning of one note in the sequence and the beginning of the next note (156 in Figure 6; see page 17, line 24 to page 18, line 21).

(vi) GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

First Ground of Rejection: Claims 1, 5-7, 13, 14, 17, 21-24, 27, 28, and 33-36 stand rejected for obviousness on the basis of U.S. patent 6,385,596 to Wiser et al in view

of a publication entitled "The New Zealand Digital Library MELody index"" by McNab et al. These references will hereafter be called simply "Wiser" and "McNab."

Second Ground of Rejection: Claims 29-32 and 37 stand rejected for obviousness on the basis of Wiser, McNab, and U.S. patent 5,874,686 to Ghias et al (hereafter simply "Ghias").

(vii) ARGUMENT

THE FIRST GROUND OF REJECTION

First, the disclosures of the references relied on in the first ground of rejection will be briefly summarized.

The Wiser Reference

The Wiser reference discloses an online music distribution system that permits a customer to select a musical composition from a written menu (see Wiser's Figure 8) and listen to a free preview before deciding to buy the composition (again, see Figure 8).

The McNab Reference

McNab discloses an online system that permits a person to sing or hum or play a few notes, which are then transcribed into ordinary music notation and matched against patterns in a database.

Indedpenent claim 1

The first "wherein" clause of claim 1 provides that "the person is provided with a set of keys to ... choose from ...". Section 4 of the Final Rejection (that is, the Office Action of November 22, 2005) acknowledges that neither Wiser nor McNab discloses this. "However," the Final Rejection continues,

> McNab teaches that the specimen can be extracted from singing (e.g. humming into a microphone) or playing (e.g., entering via a musical instrument) a few notes. To accommodate such options, McNab's system must have provided both means for the person to choose, e.g., both a microphone and a musical instrument are in place. As such, it would have been obvious ... that a person who chose[s] to vocalize a

few notes could have initiated a tuning process by playing a few keys on the available musical instrument before vocalizing because tuning tends to better position one's tone on a musical scale.

Not surprisingly, Applicant respectfully disagrees with this reasoning. If a person using McNab's system elects to sing or hum a specimen, only a microphone needs to be present. If the person elects to play the specimen, perhaps a microphone is present (or perhaps an audio signal is created electronically, as by using an electric keyboard, so that a microphone would not be needed). But even if the person elects to play the specimen using an acoustic instrument and thus uses a microphone to pick up the notes, there is no reason why this person would abandon his original intention to play the sample and decide to sing or hum it instead. Moreover, the above-quoted comment from the Final Rejection seems to assume that an instrument would, itself, be tuned to standard or concert pitch. This is not true; all that is necessary when playing a guitar, for example, is that the strings must be in tune relative to one another.

In addition, an ordinarily skilled person would have had no reason to think that a person who elected to sing or hum a few notes would find it desirable to "initiate a tuning process by playing a few keys on the available musical instrument before vocalizing because tuning tends to better position one's tone on a musical scale." In McNab's "Adapting to the user's tuning" section on page 4 of the reference, McNab observes that "[I]n **some applications**, it is desirable to tie note identification to a particular standard of tuning, such as A-440" (emphasis supplied). But he immediately goes on to state that "[f]or a melody retrieval application, ... it is often desirable to adapt to the user's own tuning and tie note identification to musical intervals rather than to any standard." In view of McNab's own respect for "the user's own tuning" and the very real possibility that an

instrument that might be present in McNab's system would not be tuned to concert pitch, it is respectfully submitted that the McNab reference would not have motivated an ordinarily skilled person to provide a person who wanted to vocalize a specimen with (in the words of claim 1) "a set of keys to hear and choose from" in order (in the words of the Final Rejection) "to better position one's tone on a musical scale."

Independent claims 14 and 21

Independent claim 14 recites that the specimen comprises "codes to identify the notes picked out rather than sounds picked up by a microphone...". Similarly, independent claim 21 recites "sending codes that identify notes in the specimen...". It is respectfully submitted that an ordinarily still person who was guided by the McNab reference would use audio signals for the specimen, and not codes instead of audio signals. Accordingly, it is respectfully submitted that claims 14 to 21 are patentable over the references.

Section 8 of the Final Rejection takes the general position that it would have been obvious to play a simulated musical instrument instead of a real one, in which case codes in electronic form would already be present for use in McNab's system. There is a fundamental problems with this position, though. Even if codes in electronic form are available at some point within the circuitry of an electric keyboard, for example, nothing in McNab would suggest using them instead of actual vocalized or played notes.

Independent claim 34

Turning now to independent claim 34, step (a) provides that a specimen is generated by a person "using an apparatus configured for sending and receiving information via a network," with this apparatus including keys that are assigned notes of a musical scale and a transducer that sounds the notes when the keys are actuated. Claim 34

concludes with a "wherein" clause which provides that a person "generates the specimen by actuating a sequence of keys while listening to the notes sounded by the transducer."

It is respectfully submitted that nothing in McNab would have led an ordinarily skilled person, who wanted to improve Wiser's system in some way, to generate a specimen using a keyboard that is already present in an **apparatus that is configured for sending and receiving information via a communication network**, such as a personal computer. Accordingly, it is respectfully submitted that the invention defined by claim 34 would not have been obvious from the cited references.

Dependent Claims Included in the First Ground of Rejection

The dependent claims rejected for obviousness on the basis of Wiser and McNab add further limitations to what is recited in the independent claims discussed above, so these dependent claims are automatically patentable along with their independent claims. Nevertheless, several of the dependent claims will now be individually addressed.

Claim 28 depends from claim 1 and recites that "the person is additionally provided with a user-adjustable tempo for vocalizing the specimen." Section 9 of the Final Rejection comments that "providing manual control for adjusting tempo is well known in the art of electronic keyboard." Applicant has little familiarity of electronic keyboards, but if his memory is correct, it is rhythm (waltz, bossa nova, rhumba, and so forth) rather than tempo that is manually controlled. At any rate, even if it is known to have electronic keyboards with manually adjustable tempos, the Final Rejection offers no explanation of why a person who vocalizes his specimen would want to use this feature.

Claim 33 provides that the method of independent claim 21 further comprises "displaying the simulated musical instrument on a monitor that additionally displays a

plurality of options for use by the person, the options including a record option, a play option, a back-up option, and a send option, the simulated musical instrument and the options being actuated by the person using a pointing device." Section 9 of the Final Rejection takes the position that this would have been obvious, without identifying any particular item of prior art or offering an explanation as to why an ordinarily skilled person who wanted to improve Wiser/McNab would have been drawn to this prior art.

Claim 35 depends from independent claim 34 and adds the step of "displaying on [a] screen a mapping that associates notes of the scale with the keys of the keyboard" (that is, the keyboard of an apparatus that is configured for sending and receiving information via a communication network in accordance with claim 34). Section 9 of the Final Rejection asserts that it is "well known in the art of computer-implemented musical player such as simulated piano wherein symbols of a set of keys with their associated notes are displayed on a monitor for user's interactive actuation of the player." Section 9 continues by stating that "it would have been obvious ... to use computer simulated or computer controlled musical instrument for providing the user's key-in interface because the above interfaces/control enables a novice player to quickly learn, with trials and errors using record-play-rewind buttons, how to operate the simulated instrument." However, it is respectfully submitted that an ordinarily skilled person who considered the statement in McNab's abstract that "[y]ou can sing (or hum, or play) a few notes" would assume that somebody who wanted to identify a tune would not choose the "play" option if that "someone" is a novice player. An ordinarily skilled person who wanted to implement McNab's "play" option by providing a musical instrument would undoubtedly select a real instrument. At any rate, a novice player would likely produce an inferior specimen for

identification, something that an ordinarily skilled person who wanted to improve Wiser/McNab would naturally want to avoid.

THE SECOND GROUND OF REJECTION

The second ground of rejection relies on Ghias in addition to Wiser and McNab. In Ghias, a melody is converted into a sequence of digitized relative pitch differences between successive notes, and this sequence is matched against a database (see Ghias' abstract).

Since the claims covered by the second ground of rejection are all dependent claims, they are patentable along with their independent claims.

In addition, claim 29 (which depends from claim 1) recites that deriving the pattern comprises "detecting whether the specimen has a loudness level greater than a predetermined value, dividing the specimen into a plurality of frequency bands, **finding a first one of the frequency bands that has the strongest signal when the loudness level of the specimen is greater than the predetermined value, detecting when the strongest signal shifts to a second one of the frequency bands if the loudness level of the specimen is greater than the predetermined value**, and detecting the number of half tones between the first one of the frequency bands and the second one of the frequency band" (emphasis added). Ghias says nothing about using a predetermined loudness level while detecting the strongest signals in different frequency bands.

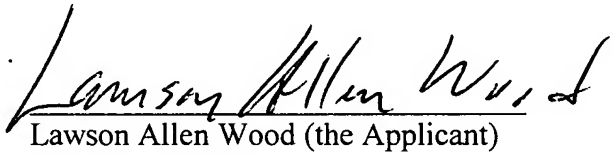
Claim 30 also depends from claim 1, and recites "generating information identifying a sequence of notes in the specimen without rests between the notes, and information about the time interval between the beginning of one note in the sequence and the beginning of the next note." Claims 32 and 37 are similar, but depend from

independent claims 21 and 34, respectively. Ghias appears to be concerned with just a sequence of pitch differences. Just why would Ghias lead an ordinarily skilled person to ignore time occupied by rests between notes and then become concerned about the time between the beginning of one note and the beginning of the next note?

CONCLUSION

For the foregoing reasons, it is respectfully submitted that the claims on appeal are patentable over the cited references. Accordingly, the Examiner's rejection of these claims should be reversed.

Respectfully submitted,



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(viii) CLAIMS APPENDIX

The claims involved in this appeal are presented below.

1. A method for distributing music over the internet, comprising the steps of:

(a) recognizing a plurality of musical compositions from a specimen vocalized by a person, by comparing a pattern derived from the specimen with patterns from a pattern library;

(b) sending information to identify the musical compositions in writing to the person over the internet;

(c) receiving a request from the person over the internet for an audio preview of one of the musical compositions, which has been selected by the person;

(d) sending a corrupted version of some or all of the selected musical composition to the person over the internet;

(e) receiving a request from the person over the internet for the selected musical composition without corruption; and

(f) sending the selected musical composition without the corruption to the person,

wherein the person is provided with a set of keys to hear and choose from before vocalizing the specimen, and

wherein the pattern derived from the specimen comprises pitch information.

Claims 2-4 (cancelled)

5. The method of claim 1, further comprising receiving the specimen over the internet and then deriving the pattern from the specimen.

6. The method of claim 1, wherein the pattern derived from the specimen is received over the internet.

7. The method of claim 1, wherein step (f) is conducted over the internet.

Claims 8-12 (cancelled).

13. The method of claim 1, further comprising securing payment for the musical composition without corruption before conducting step (f).

14. A method for distributing music to a person over the internet, comprising the steps of:

(a) picking out a musical specimen on a simulated musical instrument, step (a) being conducted by the person, the specimen comprising codes to identify the notes picked out rather than sounds detected by a microphone, the codes being selected from a set having not more than about twelve codes per octave, the codes in the set identifying notes in an evenly-tempered scale;

(b) sending the specimen over the internet to a music distribution company;

(c) recognizing at least one candidate musical composition from the specimen, step (c) being conducted by the music distribution company;

(d) sending information to identify the at least one candidate musical composition in writing to the person over the internet;

(e) selecting a musical composition from the at least one candidate musical composition, step (e) being conducted by the person;

(f) sending a request for an audio preview of the selected musical composition to the music distribution company over the internet;

(g) sending a corrupted version of some or all of the selected musical composition to the person over the internet; and

(h) sending the selected musical composition without corruption to the person over the internet.

Claims 15 and 16 (cancelled).

17. The method of claim 14, wherein the simulated musical instrument comprises a member selected from the group consisting of an image of a musical keyboard, an actual musical keyboard, and a manually operable Wiser-numeric keyboard.

Claims 18 – 20 (cancelled).

21. A method for delivering a musical composition desired by a person who does not know the title of the desired musical composition, comprising the steps of:

(a) generating a specimen having information about at least a sequence of notes characterizing the desired musical composition, the specimen being generated by the person while the person is at a first location;

(b) sending the specimen over a communication network to a second location that is remote from the first location;

(c) at the second location, identifying the desired musical composition from the specimen; and

(d) sending the desired musical composition to the person,

wherein step (a) comprises providing a simulated musical instrument with which the person picks out the specimen, and

wherein step (b) comprises sending codes that identify notes in the specimen, the codes being selected from a set having not more than about twelve codes per octave, the codes in the set identifying notes in an evenly tempered scale.

22. The method of claim 21, wherein the communication network in step (b) is the internet, and wherein the desired musical composition is sent in step (d) over the internet.

23. The method of claim 21, wherein the desired musical composition that is identified in step (c) is one of a plurality of candidate compositions that are identified from the pattern derived from the specimen, and further comprising identifying the candidate compositions to the person, the desired composition being selected by the person from among the candidate compositions.

24. The method of claim 21, wherein the specimen additionally includes information about the duration of the notes in the sequence.

Claims 25 and 26 (cancelled).

27. The method of claim 1, wherein the specimen further comprises duration information.

28. The method of claim 1, wherein the person is additionally provided with a user-adjustable tempo for vocalizing the specimen.

29. The method of claim 1, wherein deriving the pattern comprises detecting whether the specimen has a loudness level greater than a predetermined value, dividing the specimen into a plurality of frequency bands, finding a first one of the frequency bands that has the strongest signal when the loudness level of the specimen is greater than the predetermined value, detecting when the strongest signal shifts to a second one of the frequency bands if the loudness level of the specimen is greater than the predetermined value, and detecting the number of half tones between the first one of the frequency bands and the second one of the frequency bands.

30. The method of claim 1, wherein deriving the pattern comprises generating information identifying a sequence of notes in the specimen without rests between the notes, and information about time the interval between the beginning of one note in the sequence and the beginning of the next note.

31. The method of claim 14, wherein step (c) comprises identifying a sequence of notes in the specimen without rests between the notes, and information about the time interval between the beginning of one note in the sequence and the beginning of the next note.

32. The method of claim 21, wherein deriving the pattern comprises generating information identifying a sequence of notes without rests between the notes, and information about the interval between the beginning of one note in the sequence and the beginning of the next note.

33. The method of claim 21, further comprising displaying the simulated musical instrument on a monitor that additionally displays a plurality of options for use by the person, the options including a record option, a play option, a back-up option, and a send option, the simulated musical instrument and the options being actuated by the person using a pointing device.

34. A method for delivering a musical composition desired by a person who does not know the title of the desired musical composition, comprising the steps of:

(a) generating a specimen having information characterizing the desired musical composition, the specimen being generated by the person while the person is at a first location using an apparatus configured for sending and receiving information via a communication network, the apparatus including a keyboard and an audio transducer for producing sounds, keys of the keyboard being assigned notes of a musical scale and the notes being sounded by the transducer when the keys are manually actuated by the person;

(b) sending the specimen over the communication network to a second location that is remote from the first location;

(c) at the second location, identifying the desired musical composition from the specimen; and

(d) sending the desired musical composition to the person,

wherein the person generates the specimen by actuating a sequence of keys while listening to the notes sounded by the transducer.

35. The method of claim 34, wherein the apparatus additionally has a screen, and further comprising displaying on the screen a mapping that associates notes of the scale with keys of the keyboard.

36. The method of claim 34, wherein step (b) comprises sending codes that identify notes in the specimen rather than the sounds of the notes themselves.

37. The method of claim 34, wherein step (c) comprises identifying a sequence of notes in the specimen without rests between the notes, and information about the time interval between the beginning of one note in the sequence and the beginning of the next note.

(ix) EVIDENCE APPENDIX

No new evidence is being submitted with this Brief.

(x) RELATED PROCEEDINGS APPENDIX

In view of section (ii) of this Brief, no copies of decisions are appended.